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EXAMINER

NOTE, JANIS L

ART UNIT PAPER NUMBER

1756

DATE MAILED: 02/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/714,948

Applicant(s)

YOSHIMURA ET AL.

Examiner

Janis L. Dote

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2004.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1 and 3-7 is/are rejected.
7) ☒ Claim(s) 2 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 18 November 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

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1. The examiner acknowledges the amendments filed on Nov. 18, 2004, to claims 1, 2, and 4. Claims 1-7 are pending.

2. The replacement sheet drawing of Fig. 2 was received on Nov. 18, 2004. The drawing is acceptable.

3. The objection to the abstract set forth in the office action mailed on Nov. 3, 2004, paragraph 2, has been withdrawn in response to the replacement abstract filed on Nov. 18, 2004.

The objection to the drawings set forth in the office action mailed on Nov. 3, 2004, paragraph 3, has been withdrawn in response to the replacement sheet drawing of Fig. 2 filed on Nov. 18, 2004.

The objection to the specification set forth in the office action mailed on Nov. 3, 2004, paragraph 4, has been withdrawn in response to the amendment filed on Nov. 18, 2004, to claim 2.

The objection to claims 1-7 set forth in the office action mailed on Nov. 3, 2004, paragraph 6, has been withdrawn in response to the amendment filed on Nov. 18, 2004, to claim 1.

4. The indicated allowability of claims 1-7 is withdrawn in view of the newly discovered reference to Japanese

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Patent 08-095267. Rejections based on the newly cited reference follow.

5. The term "resol type phenolic resin" recited in the instant claims is defined in the specification as referring to "a compound obtained by the addition and condensation reaction between a compound having phenolic hydroxy groups and aldehydes in the presence of an alkaline catalyst." See page 10, line 26, to page 11, line 3.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35

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U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f), or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1, 3, and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent 61-041152 (JP'152) combined with Japanese Patent 08-095267 (JP'267), as evidenced by applicants' admission at page 40, lines 1-10. See the USPTO English-language translation of JP'152 and the Japanese Patent Office (JPO) machine-assisted translation of JP'267 for cites.

JP'152 teaches an electrophotographic photosensitive member comprising a conductive support having thereon a photosensitive layer comprising a charge generation layer and a surface charge transport layer. The charge generation layer comprises a charge generation material and a binder resin. The charge transport layer comprises a thermoplastic binder resin, such as a polycarbonate binder resin, a charge transport material, and an epoxy resin for enhancing the adhesion of the charge transport layer. The charge transport layer further comprises a curing agent to harden the epoxy resin to enhance the adhesion effect of the epoxy resin. USPTO translation of JP'152, page 5, lines 4-9; page 7, lines 9-15; page 9, lines 1-2 and 21-27; page 12, lines 13-23; and the table at page 14, examples 2, 4, and 5. JP'152 teaches that the epoxy resin can be an epoxy-modified phenol novolak type or an epoxy-modified cresol novolak

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type resin. USPTO translation of JP'152, page 8, lines 1-3.

The hardened or cured epoxy-modified novolak type resins disclosed by JP'512 meet the crosslinked epoxy-modified resol type phenolic resin recited in instant claims 1, 3, and 4. The charge transport layer disclosed by JP'152 meets the compositional limitations recited in the instant claims, but for the presence of the conductive fine particles. According to JP'152, because of charge transport layer's enhanced adhesion to the charge generation layer of the photosensitive member, the photosensitive member has excellent electrophotographic properties, durability, and adhesion. USPTO translation of JP'156, page 4, lines 24-27, and the table at page 14, examples 2, 4, and 5.

As discussed above, JP'152 does not exemplify a charge transport layer comprising conductive fine particles. However, JP'152 does not exclude the use of conductive fine particles. In addition, JP'152 does not limit the type of charge generation material. JP'152 teaches that the charge generation material can include phthalocyanines. USPTO translation of JP'152, page 5, line 19.

JP'267 teaches that an inorganic filler comprising titanium oxide particles having a mean particle diameter of 0.005 μm and tin oxide particles having a mean particle diameter of 0.01 μm

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can be dispersed in a surface charge transport layer coated over a charge generation layer comprising a titanyl phthalocyanine charge generation material and a binder resin of a photosensitive member. JPO translation of JP'267, paragraphs 0025-0026, and example 3, paragraph 0028. According to JP'267, the incorporation of the inorganic filler improves the abrasion resistance or wear resistance of the photosensitive material. JPO translation of JP'267, paragraphs 0003 and 0004. The combination of the inorganic filler and the titanyl phthalocyanine provides a photosensitive member that has improved wear resistance as well as stable electric characteristics after repeated use. JPO translation of JP'267, paragraph 0004.

JP'267 does not identify the titanium oxide particles and tin oxide particles as conductive particles. However, the instant specification at page 40, lines 1-5, discloses that "[e]xamples of the conductive fine particle that can be used in the present invention can be selected from the materials conventionally well known in the art including, for example . . . titanium oxide, tin oxide" Accordingly, it is reasonable to presume that the JP'267 titanium oxide particles and tin oxide particles are conductive fine particles as recited in the instant claims. The burden is on applicants to prove

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otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of JP'267, to incorporate the inorganic filler comprising titanium oxide particles and tin oxide particles as taught by JP'267 and to use the JP'267 titanyl phthalocyanine as the charge generation material in the charge transport layer and the charge generation layer, respectively, of the photosensitive member disclosed by JP'156. That person would have had a reasonable expectation of successfully obtaining an electrophotographic photosensitive member having improved wear resistance and stable electric characteristics after repeated use.

9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP'152 combined with JP'267, as evidenced by applicants' admission at page 40, lines 1-10, of the instant specification, as applied to claim 1 above, further combined with US 5,476,968 (Imai). See the USPTO translation of JP'152 and the JPO machine-assisted translation of JP'267 for cites.

JP'152 combined with JP'267, as evidenced by applicants' admission at page 40, lines 1-10, of the instant specification, renders obvious an electrophotographic photosensitive member as

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described in paragraph 8 above, which is incorporated herein by reference.

Neither JP'152 nor JP'267 exemplifies the use of a charge transport material comprising a hydroxy group as recited in instant claim 5. However, JP'152 teaches that the charge transport material may comprise triphenylamines or their derivatives. USPTO translation of JP'152, page 6, lines 12-13.

Imai discloses charge transporting triphenylamine compounds comprising hydroxyl groups, N,N'-bis(p-hydroxymethyl-phenyl)benzidine compounds. Col. 1, lines 50-67, and cols. 3 and 4, compounds (1) through (8). According to Imai, said compounds are useful as charge transporting compounds in electrophotographic photoreceptors. Col. 1, lines 41-45. Imai further teaches that said compounds show better physical characteristics, e.g., light response rate, mechanical durability, or the like, among benzidine compounds that do not comprise methylol groups. Col. 1, lines 26-38 and 45-49.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Imai, to use the Imai N,N'-bis(p-hydroxymethyl-phenyl)benzidine compound as the charge transporting material in the charge transport layer of the photosensitive member rendered obvious over the combined teachings of JP'152 and JP'256, as evidenced by applicants'

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admission at page 40, lines 1-10, of the instant specification.

That person would have had a reasonable expectation of successfully obtaining an electrophotographic photosensitive member having the improved stability, light response, and mechanical durability as taught by Imai.

10. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,430,526 (Ohkubo) combined with JP'152 combined with JP'267, as evidenced by applicants' admission at page 40, lines 1-10, of the instant specification. See the USPTO translation of JP'152 and the JPO machine-assisted translation of JP'267 for cites.

Ohkubo discloses an electrophotographic image forming apparatus comprising all the components recited in instant claim 7, but for the particular photosensitive member. Fig. 1 and col. 2, line 56, to col. 3, line 56. Ohkubo also discloses a process cartridge, which comprises all the components recited in instant claim 6, but for the particular photosensitive member. Fig. 2 and col. 3, line 58, to col. 4, line 8. Ohkubo discloses that the charging member is a contact charging roller. Ohkubo teaches that a contact charging roller is "advantageous over a non-contact type corona discharger in that the voltage of the voltage source can be reduced, that an amount of corona

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discharge products such as ozone is small and in that the structure is simple." Col. 1, lines 26-33. In Ohkubo's contact charging roller, an oscillating voltage is applied to the charging roller in the form of a DC-biased AC voltage. The peak-to-peak voltage of the oscillating voltage is not less than twice the absolute value of a "charge starting voltage" relative to the photosensitive member. Said oscillating voltage provides uniform charging. Ohkubo discloses that "uneven charging hardly occurs in a regular developer or a reverse development process." Col. 1, lines 36-42, and col. 4, lines 9-17.

Ohkubo does not disclose the use of the photosensitive member recited in the instant claims. However, Ohkubo does not limit the type of photosensitive member used. Col. 4, lines 29-35.

JP'152 combined with JP'267, as evidenced by applicants' admission at page 40, lines 1-10, of the instant specification, renders obvious an electrophotographic photosensitive layer that is within the compositional limitations recited in the instant claims. The discussions of JP'152, JP'267, and applicants' admission in paragraph 8 above are incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of JP'152 and JP'267,

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to use the photosensitive layer rendered obvious over the combined teachings of teachings JP'152 and JP'267, as evidenced by applicants' admission at page 40, lines 1-10, as the photosensitive layer of the photoreceptive drum in the apparatus and process cartridge disclosed by Ohkubo, because that person would have had a reasonable expectation of successfully obtaining an electrophotographic apparatus and process cartridge that have benefits disclosed by JP'152 and JP'267.

11. Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record does not teach or suggest an epoxy modified resol type phenolic resin having both addition and condensation structures as recited in instant claim 2.

As discussed in paragraph 8 above, JP'152 teaches an epoxy-modified phenol novolak type or an epoxy-modified cresol novolak type resin. USPTO translation of JP'152, page 8, lines 1-3. The JP'152 epoxy-modified resins only comprise condensation structures. However, claim 2 requires an epoxy-modified resol type phenolic resin that includes both condensation and addition structures.

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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (571) 272-1385. The central fax phone number is (703) 872-9306.

Any inquiry regarding papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLD
Feb. 5, 2005

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